

ABoVE Full SDT Telecon (1B) – 4/3/13

Attendees: Natalie Boelman, Steve Colt, Josh Fisher, Scott Goetz, Peter Griffith, Forrest Hall, Bob Harriss, Dan Hayes, Jeremy Karchut, Eric Kasischke, Libby Larson, Michelle Mack, Dave McGuire, Juha Metsaranta, Rob Striegl, Ruth Varner, Diane Wickland, Stan Wullschleger; Rapporteur: Elizabeth Hoy

Agenda:

- 1) Development of questions in Scoping Study Report (Eric)
- 2) Panel review and recommendations (Diane)
- 3) Workshop recommendations (Eric)
- 4) Science questions / themes (Dan)
- 5) Group discussion on science questions / themes

Opening Remarks

Diane W. recounted the recommendations from the panel review and the workshop:

Scoping study Review Panel Recommendations: the question of future changes in the region is appropriate; consider the integrated system, including cross discipline interactions; more should be done to have the science questions focus on interactive system and the human system interactions; one issue here is how to expand the scope and keep the campaign reasonable

Workshop Recommendations: while the scoping study is good, the questions could be sharpened and the study should be designed to be compelling to the general community. Instead of just refining the four questions, consider a single overarching question too.

Diane W.'s Challenge to the group: Determine how to best respond to these review issues and integrate these recommendations into the experiment plan.

General Discussion

Topic introduced by ABoVE co-chairs: What could an overarching theme be and/or how might the science questions fit together?

Question – To what extent is global change driving the campaign? Does it all hinge on climate change or is it environmental or direct human driven (oil exploration, etc.)?

- Dan H. response: Change spectrum could be something that could unite the project (from pulse disturbance (ie – fire) at one end to widespread changes at the other end)
- SDT Member Comment – Initial focus of the scoping study was on boreal region as it is warming more rapidly than elsewhere, but if we move to warming or change as a focus of the project, the project may lose power. What drives ecosystem vulnerability is important here; reducing the focus from climate change loses power.
- SDT Member Comment – Climate change is influencing resource development and the tourist industry in this region

- Dan H. – Climate change is still important, but a focus on climate does not restrict us from looking at human change, or other changes
- Diane W. – This region is important because of climate change and the impacts and vulnerabilities associated with climate change. We need to gain understanding as to what is happening in the “real world” too, not just as it relates to the boreal region.
- Eric K. – Defining the scope will help us understand human disturbances
- SDT Member Comment – Human changes play into feedbacks of climate change
- SDT Member Comment – Many nations in Asia are interested in arctic – for commerce, resources, and arctic transport. Changes in timber, oil and gas needs will have land use consequences. Local impacts could even include black carbon from machines. Also, it is important to develop a good set of hypotheses.
- SDT Member Comment – Sum up: there is an emphasis on climate change, and it is important not to overlook warming in the arctic; we need to find ways to make this relevant to social systems as human feedbacks and impacts are important too. Integrating natural and social systems will bring visibility to the study. Vulnerability is a rich word. IPCC has a good definition (see below) which includes natural and social systems and doesn’t necessarily draw a distinction between the two. Vulnerability could be tied to the overarching question.
 - o IPCC Definition of Vulnerability (<http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-intro.pdf>): Vulnerability is the degree to which a system is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the character, magnitude, and rate of climate change and variation to which a system is exposed, the sensitivity and adaptive capacity of that system.

SDT Member Comment – The phrase “net changes/impacts” is important, there are issues with scaling up; while we know bits and pieces, we could try and scale up to understand changes throughout larger regions (such as understanding global climate and albedo, etc.). One example of this is the vegetation cover and climate change paper by Scott Goetz. We need to understand how the whole arctic responds to changes.

- SDT Member Comment – Responses and feedbacks, including net feedbacks are important
- SDT Member Comment – The four science questions are good, but they are general and do not exclude issues, many studies could find a way to fit within these questions; also, some societal and transportation issues are not included (i.e. - ice roads, ice free arctic open to shipping); if additional areas were open to shipping, more areas would be open to resource extraction, these issues are not included in the questions/executive summary
- SDT Member Comment – It may be good to keep the questions broad so that NASA can meet them. The door is open for interagency collaboration to meet these goals also. In the past, NASA has focused on land processes and climate change. New emerging areas are below ground processes, methane/carbon dioxide, and climate models to understand the implications of change on the arctic. It would be good to have partners to investigate some of these other areas.

- SDT Member Comment – Broad questions allow others to partner (such as NSF). These partnerships could include economic impacts of change, change in rural and indigenous communities (such as the positive and negative impacts of oil and gas exploration on local communities).

Eric K. – Question – Should the focus of ABoVE be on understanding changes at local scales or global scales (as population in arctic is small)?

- SDT Member Comment – Question – So is the question then understanding how humans are impacted and respond to change, but also how are the local actions exacerbating or mitigating the problems?
- Diane W. – AboVE is a regional study. Implications at local and global scales can be addressed, but NASA “bought in” to a regional scale study. However, perturbations to resource availability and transportation will be important locally and globally.
- SDT Member Comment – Interior communities are often left out, coastal communities get much more attention, but in the interior changes are being felt and taking a wider research approach is important. There is a lot of information to synthesize from the local level.
- SDT Member Comment – Studying rural and indigenous communities and sustainability issues are both areas where partnership with NSF would be possible.

Question – Is NASA a part of SEARCH?

- Diane W. – NASA attends meetings but SEARCH is not directly influencing ABoVE. However, one of the SDT members was nominated by SEARCH.
- Eric K. – SEARCH is open to potential linkages with ABoVE
- SDT Member Comment – SEARCH vision and goals could line up with ABoVE in some ways. NSF supports human behavior and responses. NASA should be open and responsive to how we can partner with these other initiatives.
- Dan H. – Does Canada have a good organization like SEARCH that we should be partnering with?
- SDT Member Comment – Possibly, SDT members will check. Different individuals have studies, but there is not a coordinated effort that is known.
- Peter G. – The SEARCH report is now available (<http://www.arcus.org/search/aon> or http://www.arcus.org/files/page/documents/18992/aon_2012_full_report.pdf). There is some commonality between groups and there are areas where NSF or other agencies could provide funding.

Question – Have the NSPIRES awards for dataset development been announced yet?

- Diane W. – NASA awards will be announced soon, possibly by next week. Also, some datasets will come out of the project office. Let us know if something should be brought up sooner.
- Peter G. – some planning for data sets is needed – the hope is to pull a group together from the SDT to help gather resources